

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

32. (original) A process for partially removing a conductive front surface of a semiconductor wafer having a conductive front surface, the process comprising the steps of:

(a) positioning the conductive front surface above a cathode assembly which comprises multiple cathode members;

(b) providing an etch solution that wets said cathode members and said conductive front surface;

(c) connecting said multiple cathode members to multiple power sources, wherein said multiple cathode members are substantially electrically isolated from one another;

(d) applying power to said cathode members from said multiple power sources;

(e) positioning a mask plate between said cathode assembly and said conductive front surface of said wafer; and

(f) flowing said etch solution through said mask plate so that said etch solution wets said conductive front surface.

33. (original) The process of Claim 32, further comprising (g) controlling the etching at selected parts of said conductive front surface.

34. (original) The process of Claim 33, wherein step (g) comprises directing, through said cathode members, said etch solution at said selected parts of the conductive front surface.

35. (original) The process of Claim 34, wherein step (g) further comprises directing said etch solution to a peripheral part of said conductive front surface separately from directing said etch solution to a center part of the conductive front surface.

36. (original) The process of Claim 35, wherein step (g) further comprises operatively interfacing selected cathode members with said selected parts of the conductive front surface.

37. (currently amended) A process for electrochemically removing ~~etching~~ or depositing a layer of a semiconductor wafer, the process comprising the steps of:

(a) flowing a solution through an electrode assembly which comprises a first electrode member and a second electrode member;

(b) transporting said solution from said electrode assembly ~~and~~ to a mask plate that interfaces said wafer;

(c) wetting selected parts of said wafer with said solution; and

(d) applying a current to said selected parts of said wafer.

38. (original) The process of Claim 37, wherein step (c) further comprises operatively interfacing said first and second electrode members with said selected parts of said wafer.

39. (original) The process of Claim 38, wherein step (c) further comprises directing said solution at said selected parts of said wafer.

40. (original) The process of Claim 39, wherein said selected parts comprise a peripheral part and a center part.

41. (original) The process of Claim 40, wherein step (c) further comprises etching said center part prior to etching said peripheral part.

42. (original) The process of Claim 41, wherein step (c) further comprises sequentially providing said current to said first and second electrode members.

43. (original) The process of Claim 37, further comprising (e) one of contacting, sweeping, and polishing said wafer with said mask plate.

44. (original) The process of Claim 37, wherein said electrode assembly comprises a cathode assembly.

45. (original) The process of Claim 37, wherein said electrode assembly comprises an anode assembly.

46. (currently amended) An electropolishing method for removing material from a conductive surface of a wafer using a cathode assembly comprising at least two cathodes and a surface, and an electropolishing solution that wets the cathode assembly and the conductive surface, the method comprising:

positioning ~~a portion of~~ the conductive surface near the surface of the cathode assembly;
supplying power to each cathode wherein each cathode is adapted to receive different power; and

mechanically sweeping the surface of the wafer with a mask plate while maintaining a relative motion between the mask plate and the surface.

47. (original) The electropolishing method of Claim 46, further comprising the step of flowing the electropolishing solution through openings in the mask plate.

48. (original) The electropolishing method of Claim 46, further comprising the step of flowing the electropolishing solution through openings in each cathode.

49. (original) The electropolishing method of Claim 48, wherein each cathode is adapted to flow electropolishing solution at a different electropolishing solution flow rate.

50. (original) The electropolishing method of Claim 48, wherein each cathode is adapted to flow electropolishing solution having different acidity.

51. (original) The electropolishing method of Claim 46, wherein the relative motion comprises rotating the wafer so that the rest of the conductive surface comes near the surface of the cathode assembly.

52. (currently amended) The electropolishing method of Claim 46, wherein ~~application of different power to each cathode is adapted to remove material~~ causes different material removal rates from the conductive surface at different rates.

53. (currently amended) The electropolishing method of Claim 46, wherein the step of positioning positions a portion of the conductive surface near the surface of the cathode assembly ~~is the whole conductive surface.~~

54. (original) The electropolishing method of Claim 53, further comprising the step of flowing the electropolishing solution through openings in the mask plate.

55. (original) The electropolishing method of Claim 53, further comprising the step of flowing the electropolishing solution through openings in each cathode.

56. (original) The electropolishing method of Claim 55, wherein each cathode is adapted to flow electropolishing solution at a different electropolishing solution flow rate.

57. (original) The electropolishing method of Claim 55, wherein each cathode is adapted to flow electropolishing solution having different acidity.

58. (original) The electropolishing method of Claim 53, wherein the relative motion comprises rotating the wafer so that the rest of the conductive surface comes near the surface of the cathode assembly.

59. (currently amended) The electropolishing method of Claim 53, wherein ~~application of different power to each cathode~~ is adapted to remove material ~~causes different material removal rates from the conductive surface~~ at a different rate.

~~5960.~~ (currently amended) The electropolishing method of Claim 46, wherein removal rate between a center portion and an edge portion of the conductive surface is substantially equal.

~~5961.~~ (currently amended) The electropolishing method of Claim 53, wherein removal rate between a center portion and an edge portion of the conductive surface is substantially equal.